FIG. 2

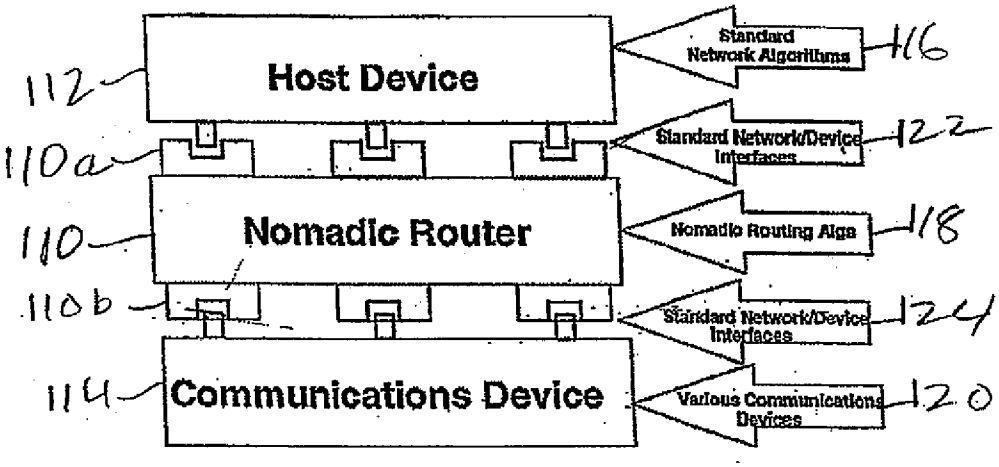
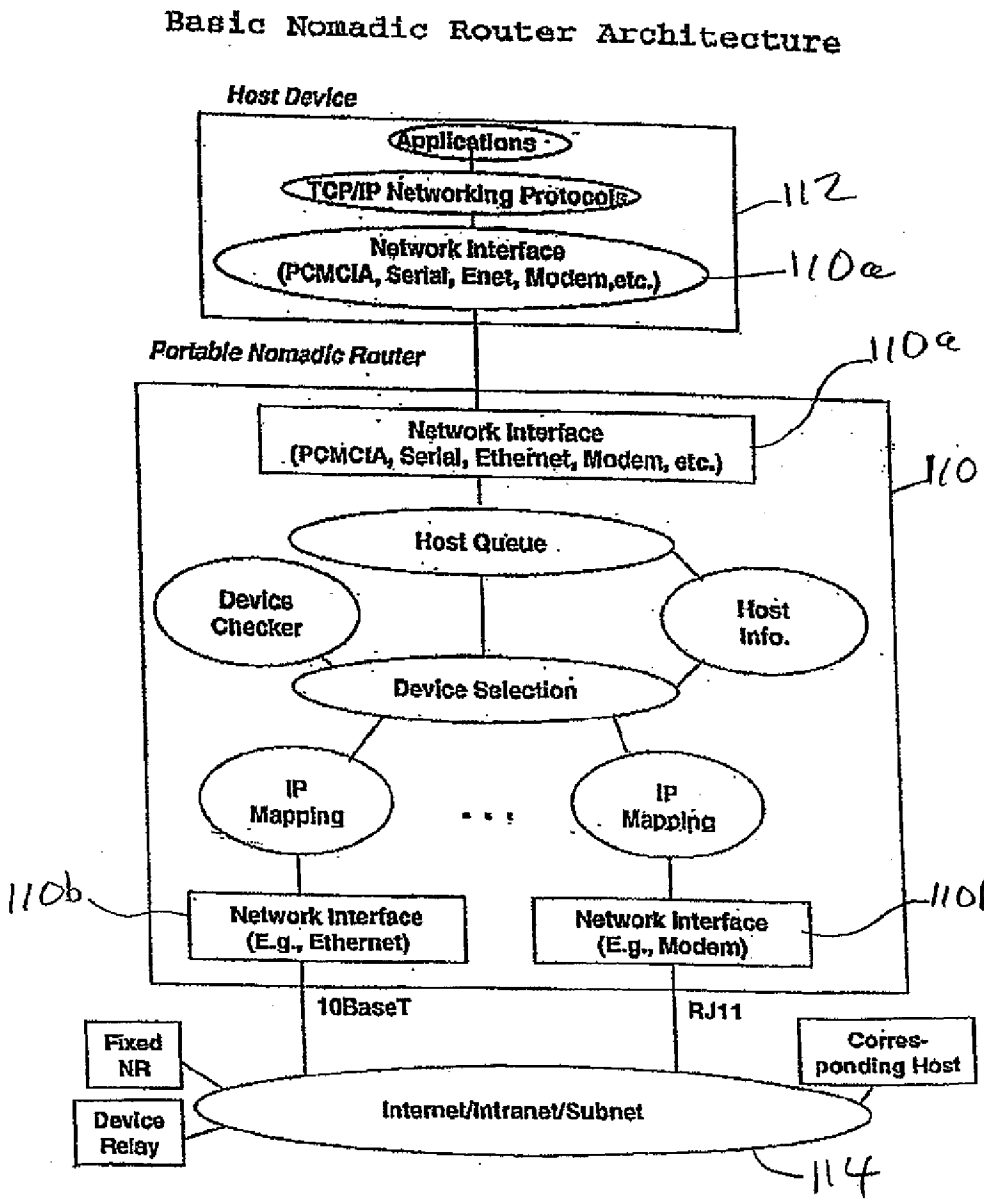
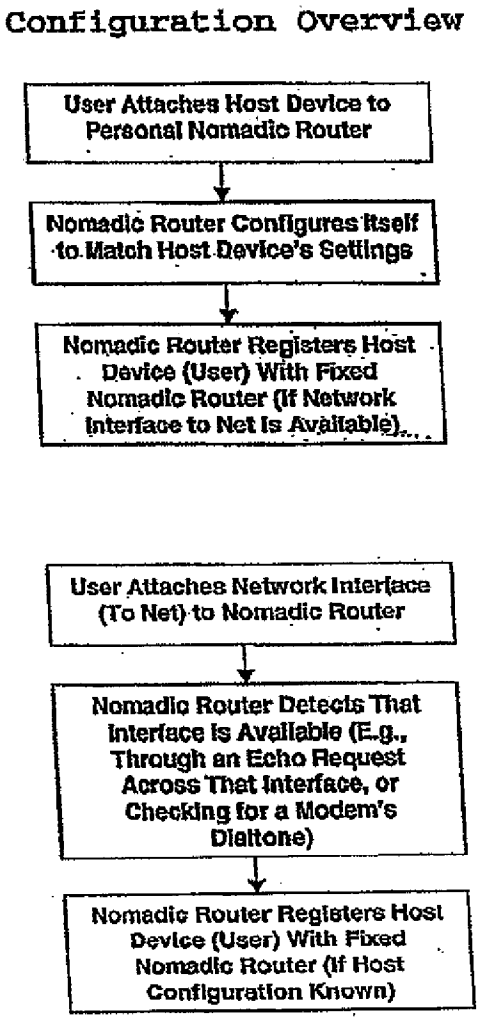

Host Device
Nomadic Router
Communications Device
Standard Network Algorithms
Standard Network/Device Interfaces
Nomadic Routing Algs
Standard Network/Device Interfaces
Various Communications Devices
112
110a
110
110b
114
116
122
118
124
120

FIG. 3


Basic Nomadic Router Architecture
Host Device
Applications
TCP/IP Networking Protocols
Network Interface
(PCMCIA, Serial, Enet, Modem,etc.)
112
110a
Portable Nomadic Router
110c
Network Interface
(PCMCIA, Serial, Ethernet, Modem, etc.)
110
Host Queue
Device Checker
Host Info.
Device Selection
IP Mapping
IP Mapping
110b
Network Interface
(E.g., Ethernet)
Network Interface
(E.g., Modem)
110d
10BaseT
RJ11
Fixed NR
Device Relay
Corres-ponding Host
Internet/Intranet/Subnet
114

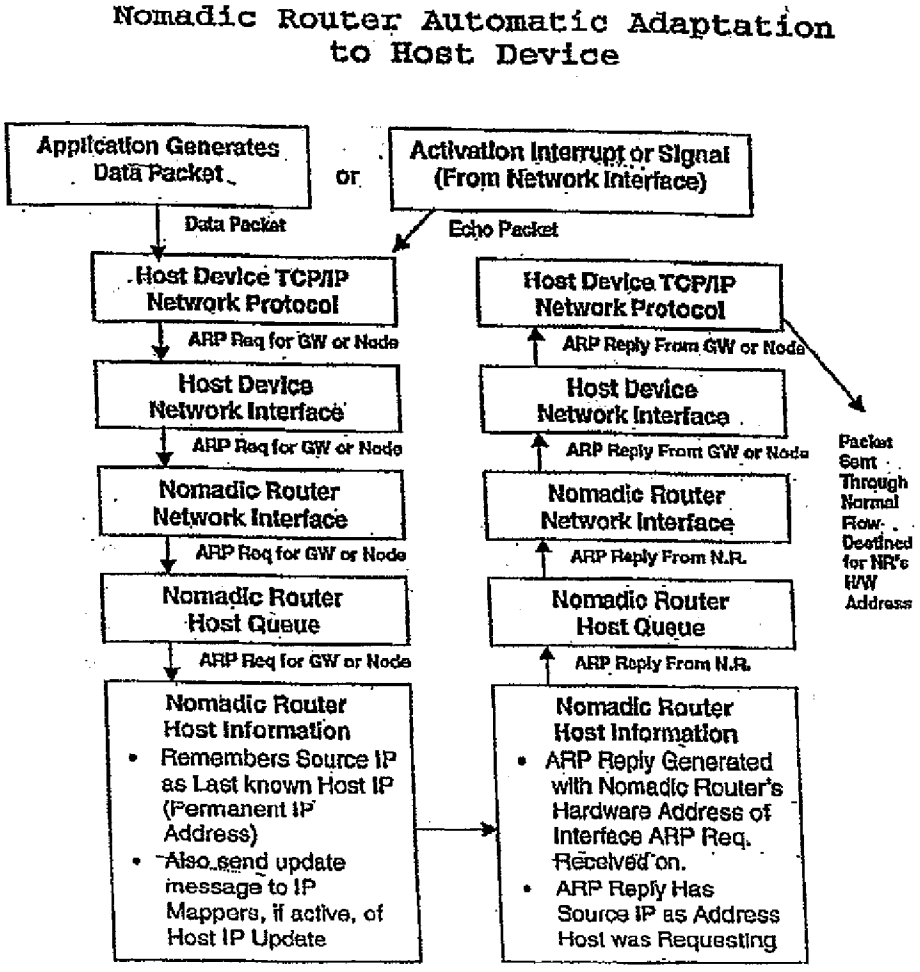
NEW SHEET

FIG. 4



NEW SHEET

FIG. 5



NEW SHEET

FIG. 6

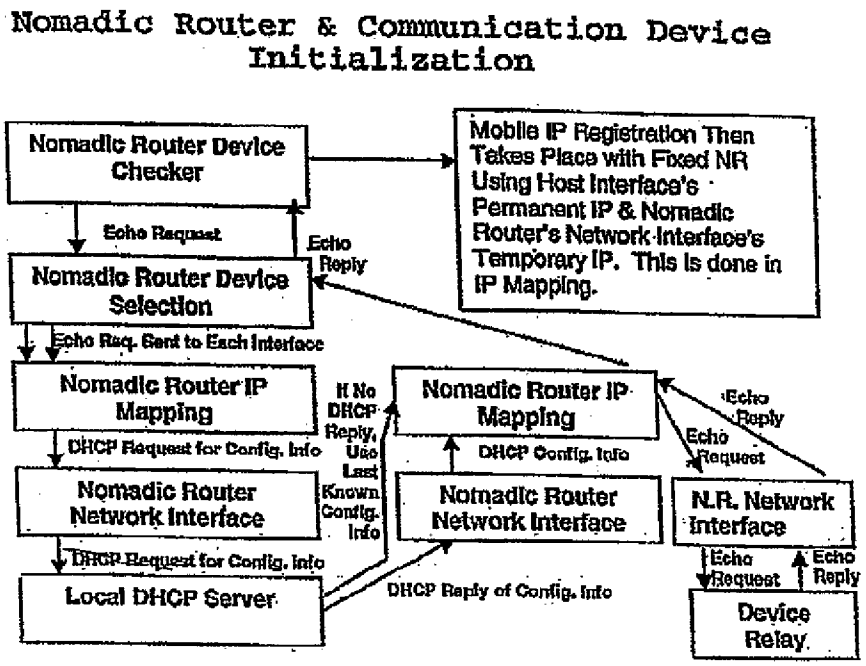
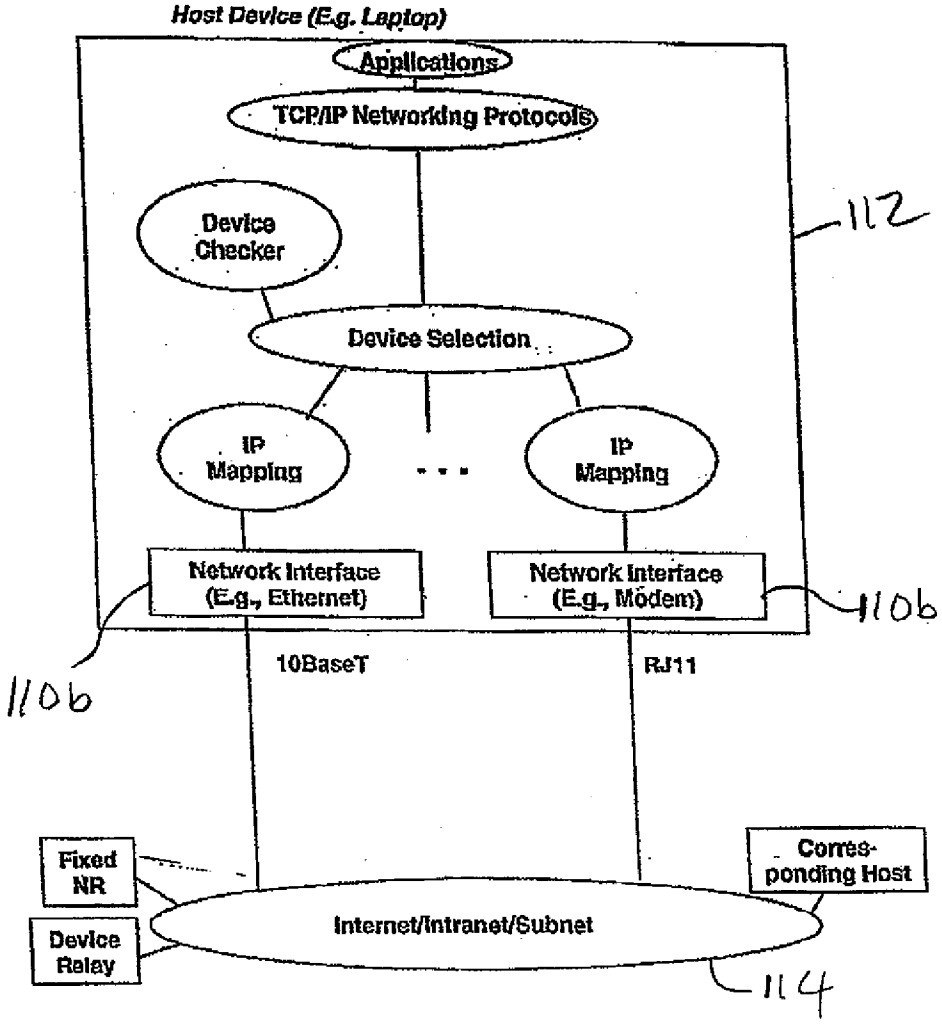


FIG. 7

Software Implementation of
Basic Nomadic Router



NEW SHEET

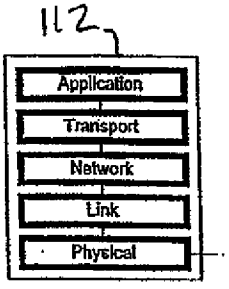


FIG. 8a

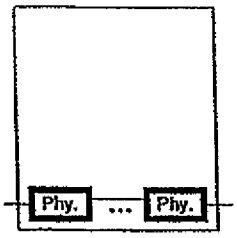


FIG. 8b

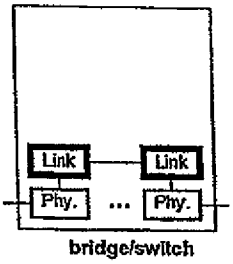


FIG. 8c

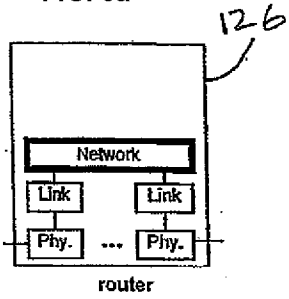


FIG. 8d

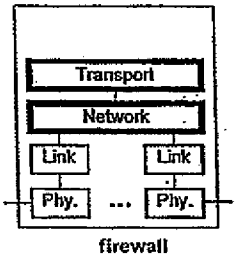


FIG. 8e

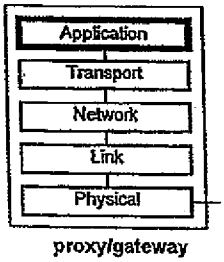


FIG. 8f

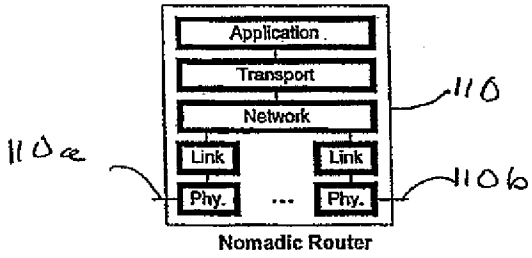


FIG. 8g

NEW SHEET

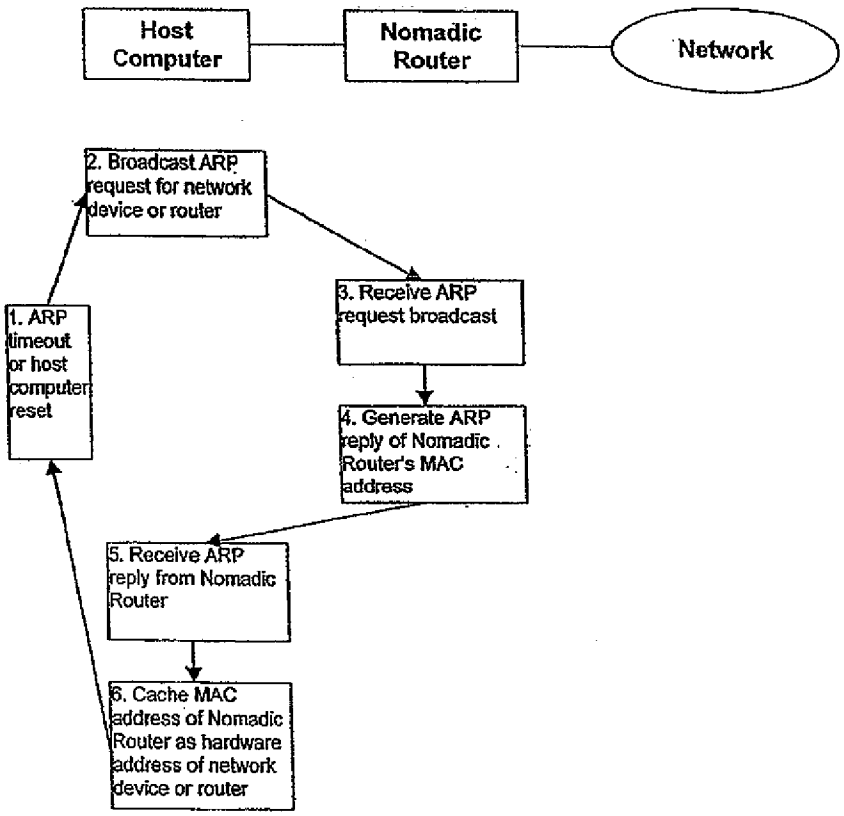


FIG. 9

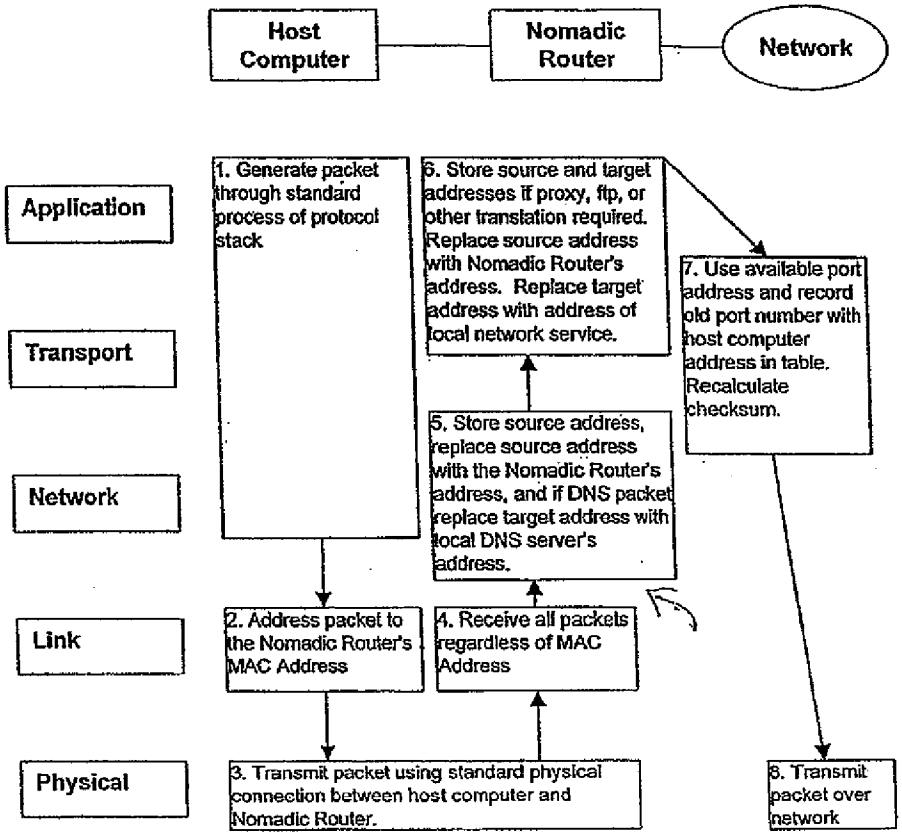

Host Computer
Nomadic Router
Network
Application
Transport
Network
Link
Physical
1. Generate packet through standard process of protocol stack
2. Address packet to the Nomadic Router's MAC Address
3. Transmit packet using standard physical connection between host computer and Nomadic Router.
4. Receive all packets regardless of MAC Address
5. Store source address, replace source address with the Nomadic Router's address, and if DNS packet replace target address with local DNS server's address.
6. Store source and target addresses if proxy, ftp, or other translation required. Replace source address with Nomadic Router's address. Replace target address with address of local network service.
7. Use available port address and record old port number with host computer address in table. Recalculate checksum.
8. Transmit packet over network

FIG. 10a

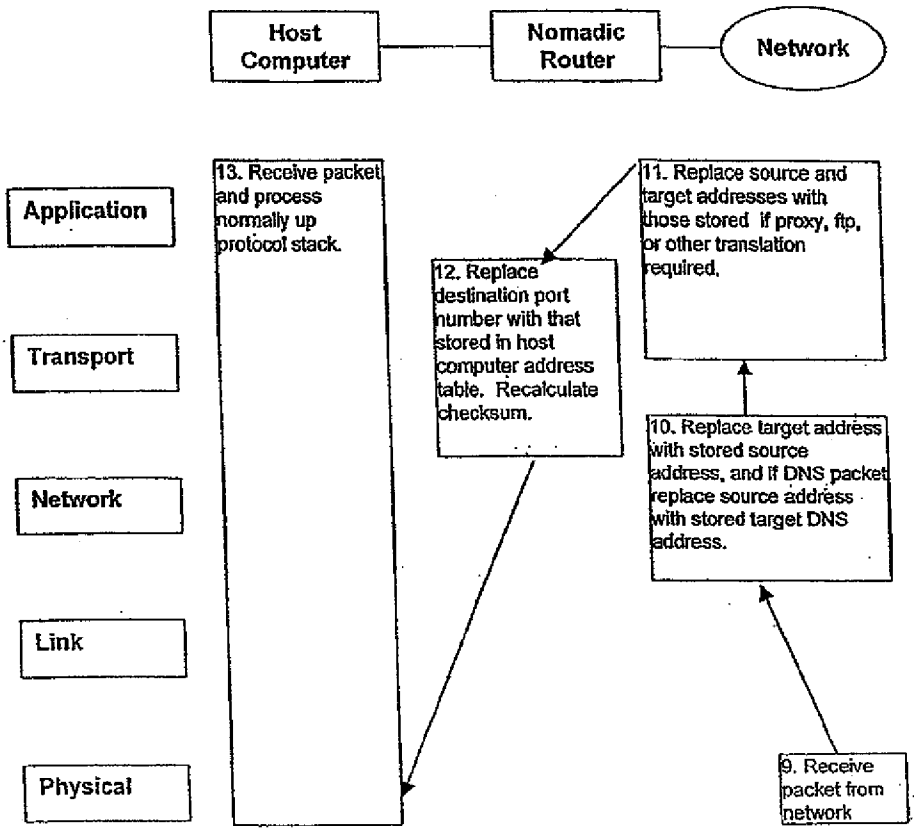

Host Computer
Nomadic Router
Network
Application
Transport
Network
Link
Physical
13. Receive packet and process normally up protocol stack.
12. Replace destination port number with that stored in host computer address table. Recalculate checksum.
11. Replace source and target addresses with those stored if proxy, ftp, or other translation required.
10. Replace target address with stored source address, and if DNS packet replace source address with stored target DNS address.
9. Receive packet from network

FIG. 10b

NEW SHEET

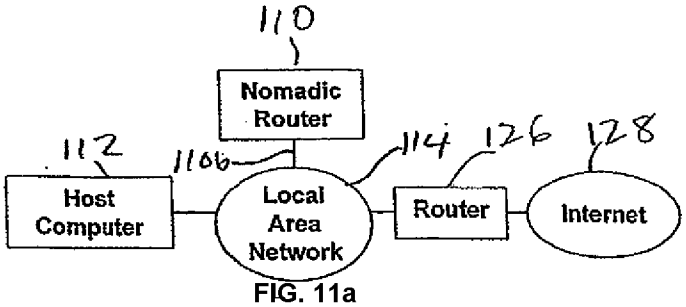


FIG. 11a

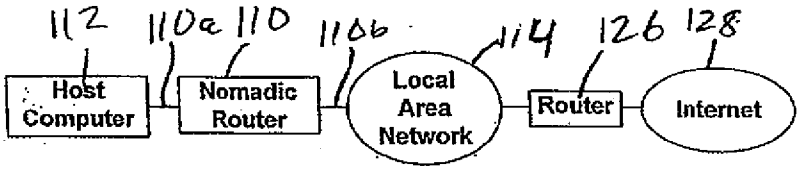


FIG. 11b

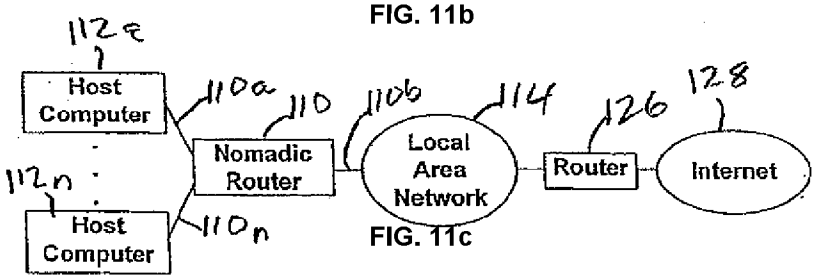


FIG. 11c

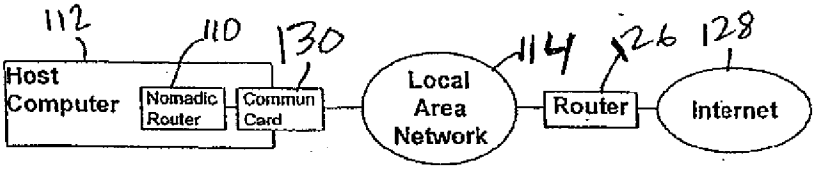


FIG. 11d

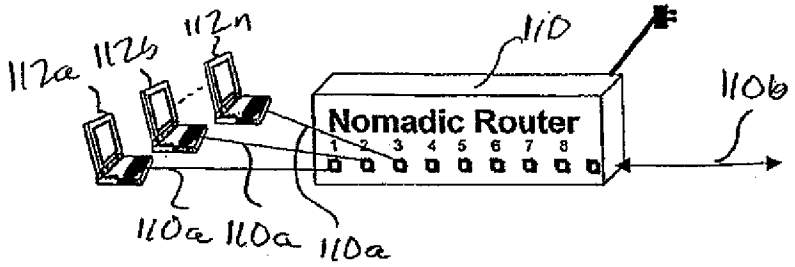


FIG. 12

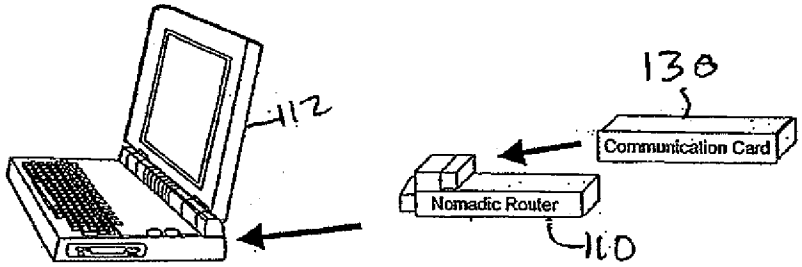


FIG. 13

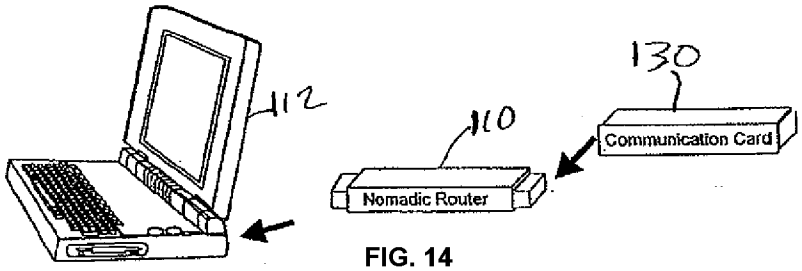


FIG. 14